CMED 301
Medical Informatics

Course Orientation

Medical Informatics and e-learning

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Health/Medical/Biomedical Informatics

- The science of health/clinical/bio/medical **data/information/knowledge** is
  - Acquired/Collected
  - Manipulated
  - Classified
  - Organized
  - Retrieved
  - Stored

Medical Informatics

- This course is designed to provide 3ʳᵈ year students with **knowledge and skills about Medical Informatics**.

- Students will learn how **data, information and knowledge is created, managed and processed using Information and Communication Technology**.

- This course will also introduce the students to electronic health record, computerized physician order entry, imaging, and Internet health applications.

Task   Edit   View   Patient   Chart   Links   Notifications   Navigation   Help

🏠 Home   📋 Patient List   📥 InBox   🔍 Cerner   👤 PMLaunch   📝 New Sticky Note   View Sticky Notes   ⏳ Tear Off   Attach   🔄 Change   Suspend   🎬 Audio/Video   💲 Charges   Charge Entry   🚪 Exit   ⚡ Orders: 0 Rx 0

| Brooks, Henri ✕ | Ragwood, Christy ✕ | Morgan, Lydia ✕ |

← List →   Recent ▾   Name

Brooks, Henri   Age: 54 years   Sex: Male   Location: BW1N; 1N09; 02   **Allergies: penicillin, Shellfish allergy**
Isolation Status:

Inpatient Summary   🖨 Print   🕐 4 minutes ago

🔍 📄 💾 📑 🔍 🔍 150% ▾ ● ● ● 🏠

Inpatient Summary

Expand All   Customize View   ❓Help

Brooks, Henri M 54 Years DOB: 05/27/1955 MRN: BWMC 008-024 FIN: 019000 Visit Reason: **AMI**
This page is not a complete source of visit information.

Patient Information −

Chief Complaint:	Chest Pain
Primary Physician:	Zimmerman MD, Phyllis
Emergency Contact:	Wallace, Adrian
Emergency #:	(913) 931-2212
Advance Directive:	Yes

Diagnoses (1 Active) −

ACUTE MYOCARDIAL INFARCTION (410)

Problems (7 Active) −

Alteration in comfort: pain (34240014)
Back pain (2646370015)
Benign essential hypertension (3135013)
Chest pain (49966017)
Diabetes mellitus - adult onset (493775015)
Diabetes mellitus without complication (178796018)
Esophageal reflux (GERD) (530.81)

Allergies (2 Active) ➕Add −

penicillin	rash
Shellfish allergy	

Medications (5) ➕Add −

Inderal 10 mg oral tablet 1 tab(s), PO, BID, 180 tab(s)
Lasix 10 mg/ml oral liquid 1 mL, PO, Once Daily, 30 mL
lisinopril 10 mg oral tablet 10 mg, 1 tab(s), PO, Once Daily
metformin 500 mg oral tablet 500 mg, 1 tab(s), PO, BID
omega-3 polyunsaturated fatty acids oral capsule PO

Past Medical (2) +

Procedures (1) +

Vitals and Measurements Last 2 years ➕Add −

	Latest	Previous	Previous
TEMP:	↑37.5	36.5	37.0
	2 wks ago	13 mos ago	13 mos ago
HR:	65	95	80
	13 mos ago	13 mos ago	13 mos ago
Respiratory Rate:	16	16	17
	13 mos ago	13 mos ago	13 mos ago
BP:	120/65	112/65	105/75
	13 mos ago	13 mos ago	13 mos ago
Weight Measured:	73.400	76.000	78.000
	13 mos ago	13 mos ago	13 mos ago
Weight Dosing:	73.400	76.000	78.000

Labs Last 2 years −

	Latest	Previous	Previous
Sodium Level :	↑146	135	139
	13 mos ago	13 mos ago	23 mos ago
Potassium Level :	4.5	4.0	5.0
	13 mos ago	13 mos ago	23 mos ago
Chloride :	110	100	110
	13 mos ago	13 mos ago	23 mos ago
CO_2 :	↑40	30	↑40
	13 mos ago	13 mos ago	23 mos ago
AGAP :	↓0	↓9	↓-6
	13 mos ago	13 mos ago	23 mos ago
Glucose, Random :	↑195	↑178	↑178
	13 mos ago	13 mos ago	23 mos ago
BUN :	↑20	18	13
	13 mos ago	13 mos ago	23 mos ago
Creatinine :	.6	1.0	↑1.4
	13 mos ago	13 mos ago	23 mos ago

Diagnostics (0) Last 6 months −

	Within	Status
EKG (0)		
No results found.		

Microbiology (0) Last 6 months +

Pathology (0) Last 5 results +

Documents (2) Last 2 years ➕Add ▾ −

	Author	Date
Admission Note-Physician	Morris MD, Lee	03/26/10
Admission Note-Physician	Zimmerman , Phyllis	03/02/09

My Favorite Orders ➕Add −

Meds	Labs	Imaging	Billing	Other

amoxicillin 250 mg oral capsule 1 cap(s), PO, TID, 10 day(s), 30 cap(s)
atenolol 50 mg oral tablet 1 tab(s),Tab,PO,Once Daily,90.00 tab(s)
Capoten 50 mg oral tablet 1 tab(s),Tab,PO,BID,180.00 tab(s)
ibuprofen 800 mg oral tablet 1 tab(s), PO, TID, 90 tab(s), PRN, as needed for pain
Lasix 40 mg oral tablet 1 tab(s),Tab,PO,Once Daily,90.00 tab(s)
metformin 500 mg oral tablet 1 tab(s),Tab,PO,BID,180.00 tab(s)
simvastatin 20 mg oral tablet 1 tab(s), PO, At Bedtime, 30 tab(s)

Scratch Pad

Select Order
　　No Orders on Scratch Pad

☐ Search Mode   Submit for Signature

Outstanding Orders (31) Last 2 years −

Admission History Adult
Admission Assessment Adult
furosemide 20 mg Tab UD
Propranolol 20 mg tab
Lipid Panel

Notes/Reminders (0) −

Sticky Notes (0)

Author	Date	Text

Learning Objectives (LO)

At the end of the course, students will be able :

LO1: To understand the **current trends** in medical informatics as they apply to the healthcare field and the health profession

LO2: To **increase awareness** of the ways in which information technology is used in **health-related situations**

LO3: To explore computer applications in health education, practice, administration and health research. Identify various types of information systems used within healthcare institutions.

Learning Objectives

LO4: To explore computer applications in_health education, practice, administration and health research.

LO5: To identify various types of information systems used within **various units** in healthcare institutions

LO6: To **conduct online search in healthcare** literature **as educational resources**

Resources

- **Course text book** : Shortliffe, E., Cimino, J. (2014). Biomedical Informatics: Computer Applications in Healthcare and Biomedicine, 4th Edition, Springer

Resources

- Chapter 1: Biomedical Informatics: the science and the pragmatics
- Chapter 2: Biomedical Data: Their Acquisition, Storage, and Use
- Chapter 10: Ethics in Biomedical and Health Informatics: Users, standards and outcomes
- Chapter 12: Electronic Health Systems

Resources

- Chapter 17: Consumer Health Informatics and personal health records
- Chapter 22: Clinical Decision-support systems

- Selected readings from paper

Resources

- Main topics covered from book
- Other topics- will be added from chapter
- Slides are for guide only
- Examination questions come from textbook & Readings from selected papers

Learning Objectives	Topics Covered	Assessments
LO1	All topics esp Consumer Health Informatics, Telehealth	Quiz, Midterm, Finals
LO2	Workshops, EHR, DSS, Telehealth, CPOE	Quiz, Midterm, Final, Workshop
LO3	EHR, DSS, Telehealth, CPOE	Quiz, Midterm, Final
LO4	CIS field visit, Ethics	CIS field visit report
LO5	Clinical Informatics as A Career for Physician, Ethics	Quiz, Midterm, Final
LO6	Tutorials &	Tutorials & Workshops

	Assessment task	Proportion of Total Assessment
1	Tutorial (one tutorial per group)	**2%**
2	Workshop: Patient safety, Paper appraisal,e-sihi, CIS	**8%**
3	Midterm	**20%**
4	Online quiz (Week 3 and Week 11)	**10%**
5	Final examination	**40%**
6	CIS Site Visit- Presentation and Report	**20%**
	TOTAL	**100%**

Tutorial Participation (2%)

1. There will be **9 tutorials** this year
2. Each group will be responsible 2 tutorials
3. Tutorials will include discussion, case study, system review, demonstration etc.
4. Members of designated group will present the tutorial
5. All groups must attend and participate in discussion or Q&A
6. Upload presentation on Blackboard to receive grade

Example

Week	Topic	Activities	# OF GROUPS
3	**Clinical Data and Databases (Tutorial)**	Review Electronic Health Record- review different types of data **What kind of errors can occur during data entry? How will this affect the quality of data?**	2 groups

Workshop Participation(8%)

1. There will be 4 Workshops this year
2. Workshop will be 2-3 hours long
3. All groups members must participate actively

Use of Computer and Web

- Blackboard
- Search Engines
- Googledoc, SlideShare, Dropbox

Blackboard- Learning Management System

- www.lms.ksu.edu.sa
- Logging In
- Course name
- Download lecture slides/View lecture slides
- Announcements
- Online Quiz
- Upload report

Attendance

- Class Attendance

Please come on time

10% missing- 1st warning letter

20% missing- 2nd warning letter

25%- will be barred from taking the final examination

- Workshop & Tutorial participation

Active Participation

Reminder: **Never SIGN** on behalf of your friends. Your integrity is our PRIORITY!

Course Policy

i. Lecture Hours
- Attend class regularly
- Pay attention
- Questions are welcomed
- Respect each other

ii. Tutorial and Workshop Hours
- Be prepared
- Avoid flaming and arguing without basis
- Open discussion
- Discussion within given topics
- Other issues can be brought up outside classroom

Course Policy

iii. Grades

- Follow grading criteria (available on Blackboard)
- Re-grading can only be done by submitting written requests and **within one week** after grade is announced.
- Always check **<u>Grade Center</u>** from time to time and contact us if there's any error as soon as possible

Clinical Information System Site Visit

- To visit **ONE clinical information system** used in a healthcare organization/center/wards.
- Examples
    - Electronic Health Record,
    - Radiology Information System
    - Computerized Physician Order Entry
    - PACS

Clinical Information System Site Visit

CIS Milestone

Week 3: Announcement of the Project

Week 5: Select system & write letter to organization

Week 7-10: Visit Organisation (choose one convenient date)

Week 11-15: Prepare CIS Site Visit Report

Week 22: CIS Presentation Day

Week 24: Submit Report

REMINDER: TUTORIAL #1

Please submit 2 GROUPS that will be responsible of tutorial #1

Submit name to by 5 pm today

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https://www.facebook.com/Ksumielu

Thank You

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nzakaria@ksu.edu.sa